

## 2<sup>nd</sup> ELECTRA / WG1 ETP SmartGrids Joint Technical Workshop: The Web of Cells and alternative Concepts

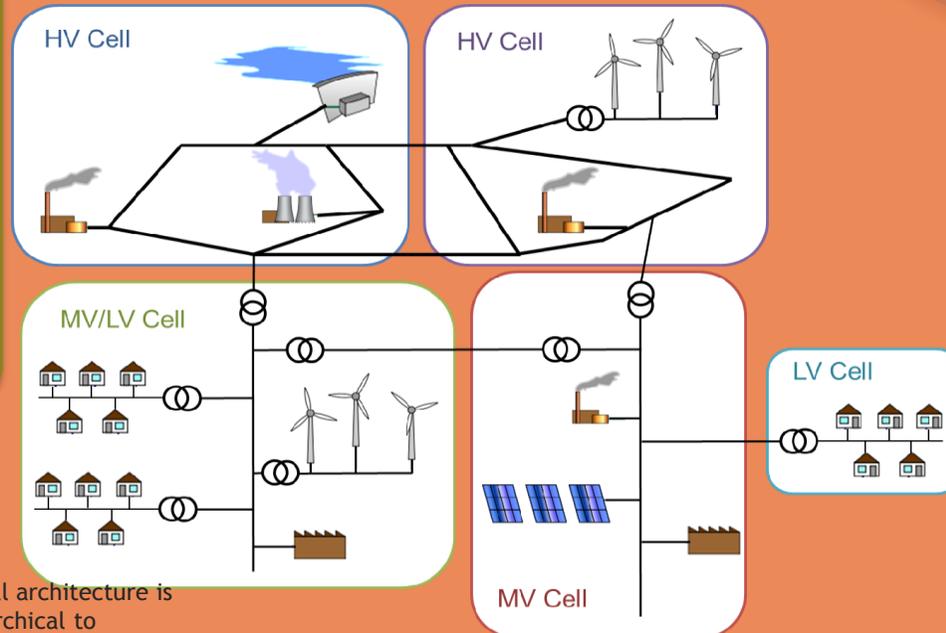
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### A web-of-cells structure is

- A group of interconnected loads, concentrated generation plants and/or distributed energy resources and storage units within well-defined grid boundaries corresponding to a physical portion of the grid and corresponding to a confined geographical area.
- A cell is by design not a microgrid. Microgrids are defined as being able to operate in grid-connected as well as “island”-mode. Being able to operate in island mode is not a requirement of a cell.
- A cell is in ‘balance’ when it is able to follow the scheduled consumption/generation schedule that was agreed between its operator and TSO at  $t_0$ .
- Cells have adequate monitoring infrastructure installed, as well as local reserves capacity enabling them to resolve voltage and cell balancing problems locally.
- Cells are connected to neighbouring cells via inter-cell physical tie lines and there can be multiple physical tie-lines between any two cells.

### New Architectures for the Grid of the Future

The workshop will present the Web of Cells concept as well as confront it with other alternative architectures for validating robustness and responsiveness. It aims to highlight the options that new technologies offer and the challenges for a flexible grid, capable of efficiently and optimally linking the sustainable energy sources of 2035 and beyond.



A web of cell architecture is highly hierarchical to manage optimally the whole integrated grid.

Schematic example of proposed “Web-of-Cells” architecture

Besides the Web of Cells concept, results from other European Smart Grids projects will be presented in the workshop, aiming to bring forth challenges for future work that have been identified. Enough time will be dedicated to an open discussion for challenging the proposed solutions.

Through the active contribution of around 50 Smart Grids experts, we aim to reach consensus on the most promising concept for building the future grid.

If you have further questions, feel free to contact:  
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10th December, 2015  
9:15 - 17:00 (CET)

21 Rue du Champ de Mars  
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Room 1/SDR1